Name:_____**Period:** _____

Analyze procedures-*What makes a good procedure?*

In science, a procedure is a detailed, step-by-step description of how to conduct an experiment or perform a task, including materials and methods, to ensure that others can replicate the work and achieve similar results

Let's analyze the procedure for a lab we did in class.

Experiment: *Materials* for the class: ● 10 pendulums each with 1 washer of 10 different lengths ● Metric ruler ● timer *Procedure:* 1. Hang the pendulum in a vertical position with the washer hanging below. 2. With the timer ready, lift the washer 90 degrees keeping the string straight. **3.** Release the washer and count the number of oscillations (swings), stop the time after **10 oscillations.** 4. Write time in the data table. 5. Repeat steps 1 to 4 two more times. 6. Calculate the average time of your trials. 7. Divide 10 by the average time to calculate the frequency. 8. Compare the frequencies of each length of string.	***Checklist for the Procedure*** 1. *How do we set it up?* 2. *What is staying the same?* 3. *What is being measured and how?* 4. *How many times do we repeat it?* 5. *What do we change?* 6. *Is there something that could be improved with the directions?*
Explain whether this procedure provides enough detail and has enough trails so that others can replicate the work and achieve similar results.	

Fix My Procedures

What are the requirements for writing good procedures?

(look on last page to see requirements or use the check list above)

Question	Procedures	What needs to be fixed?
1. Penny wants to test which brand of paper towel is the strongest when wet.	1. Cut paper towels into big strips. 2. Spray some water on each strip. 3. Tape paper towel strips on the wall. 4. Use one finger to pull down on each strip until it rips. 5. Decide which strip required the strongest pull to rip. That will be your winner.	
2. Benji wants to know which music puts babies to sleep the fastest.	1. Find 3 types of music: classical, jazz, K-pop. 2. Lay down baby in crib. 3. Start timer and play music for baby 4. See how long it takes for baby to fall asleep. 5. Record the time (in seconds) how long it took for baby to fall asleep.	
3. Roger wants to know how temperature affects the elasticity of a rubber band.	1. Get 3 rubber bands. Put one in the oven. Put one in the freezer. Put one outside. 2. Pull each rubber band and measure the maximum stretch before it breaks. Repeat for each rubber band.	
4. Tonya wants to know which plant food makes plants grow the fastest.	1. Get a pack of tomato seeds and put one seed in each cup with 10 grams of soil. 2. Add a good amount of plant food in each cup. 3 Water each cup when they look dry. 4. Wait 3 weeks and measure which plant grew tallest.	

Type into ChatGPT:

I am an 8th grade student. Help me create a step-step procedure including amounts and measurements, with at least # of trials that investigates:

science fair question

Insert a picture of your search here

Rewrite the ChatGPT suggestion here in your own words.

PEER ANAYSIS: Using the rubric, grade your peer's procedure for clarity and design.

Grading Rubric: Materials & Procedures

Name: **Date:**

Are all necessary materials/equipment listed in the Materials List?	0	I	2
Have the materials been described in sufficient detail?	0	I	2
Have exact quantities been listed for items where more than one is	0	I	2
Has a description and size for all experimental and control groups been	0	I	2
Is there a step-by-step list of all procedures?	0	I	2
Are the procedures listed in a clear, logical order, like a recipe?	0	I	2
Is there a description of the procedure to change the independent variable	0	I	2
Is there an explanation of the procedure to measure the resulting change	0	I	2
Is there an explanation of how the controlled variables will be maintained	0	I	2
Does the procedure detail the number oftimes to repeat the experiment to provide reliable data?	0	I	2

0 = No Evidence I = Some Evidence 2 = Clearly Evident

needed?

included in the Procedures List?

and how to measure that change?

in the dependent variable or

variables? at a constant value?

(should be at least three times), and is that number of repetitions sufficient

Based on the feedback what are 2 changes you are making to your procedure to improve it?

1.

2.